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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,042	09/27/2004	Katsuhiko Hiramatsu	L9289.04164	3242

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EXAMINER

PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/509,042

Applicant(s)

HIRAMATSU, KATSUHIKO

Examiner

Perez M. Angelica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/27/2004.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ericsson et al. (Ericsson, "Hybrid Type-II ARQ/AMS supported by Channel Predictive Scheduling in a Multi-User Scenario) in view of Cao et al. (Cao, USPub. No.: 2002/0089952A1).

Regarding claims 1 and 4, Ericsson teaches of a base station apparatus and method comprising (column 1, second paragraph, lines 1-3, where downlink communications are done between a base station and "mobile terminals"); a line quality prediction section for predicting radio line quality in each communication terminal apparatus based on a report value indicating the state of a propagation path (columns 1 and 2, lines 14-15 and 1-2, respectively; e.g., "prediction of the channel quality"), a first scheduler for carrying out scheduling of determining a communication terminal apparatus as a packet destination in each time slot based on prediction results of this line quality prediction section (columns 1 and 2, lines 14-15 and 1-24, respectively; where the channel does the scheduling based on the quality information). Ericsson further teaches of carrying out scheduling of determining a communication terminal

apparatus as a packet destination in the time slot to which a packet to be retransmitted is assigned in the first scheduler, based on the prediction results of the line quality prediction section, and a transmission section for transmitting a packet in accordance with the scheduling of the first scheduler (column 3, lines 30-43; where the "snoop agent" used in the "spit connections", would take care of the retransmission), and a transmission section for transmitting a packet in accordance with the scheduling of said first scheduler or the second scheduler (column 3, lines 30-43; where BS inherently possess a "transmission section").

Ericsson does not specifically teach of a second scheduler.

In related art concerning a method and system for UTMS packet transmission scheduling on shared downlink channels, Cao teaches of a second scheduler (paragraph 11, where the second scheduler would perform allocation and segmentation according to the predicted behavior provided by the first scheduler).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ericsson's predictive scheduling with Cao's dual schedulers in order to improve the transmission of scheduled packets in UMTS systems, as taught by Cao.

Regarding claims 3 and 5, Ericsson and Cao teach all the limitations of claims 1 and 4, respectively.

Ericsson and Cao do not specifically teach where the transmission section transmits the packet in the time slot to which the packet to be retransmitted is assigned, in accordance with the scheduling of the first scheduler when retransmission is required

from the communication terminal apparatus to which the packet has been transmitted, or in accordance with the scheduling of the second scheduler when no retransmission is required (pars. 113-119, where the "first scheduler" transmits when retransmission is required, "ARQ constrains").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ericsson's and Cao's predictive scheduling with Cao's further transmission of the scheduled time slots when retransmission is required in order to achieve a certain degree of predictable behavior, while allowing bandwidth conservation, as taught by Cao.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ericsson in view of Cao and further in view of Calvignac et al. (Calvignac, US Patent No.: 5,946,297).

Regarding claim 2, Ericsson and Cao teach all the limitations of claim 1.

Ericsson and Cao do not specifically teach where the first scheduler assigns a communication terminal apparatus with the best line quality in each time slot, and the second scheduler assigns a communication terminal apparatus with the best line quality except for the communication terminal apparatus assigned in the first scheduler.

In related art concerning scheduling method and apparatus for supporting ATM connections having a guaranteed minimum bandwidth, Calvignac teaches where the first scheduler assigns a communication terminal apparatus with the best line quality in each time slot, and the second scheduler assigns a communication terminal apparatus with the best line quality except for the communication terminal apparatus assigned in

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the first scheduler (column 3, lines 50-67, where the first scheduler takes care of high priority services and the second scheduler covers the "best" of "Minimum Service connections") .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ericsson's and Cao's predictive scheduling with Calvignac's scheduling of different QoS requirements aiming to guaranteeing connection for users of reserved and non-reserved bandwidth, as taught by Calvignac.


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 6:00 a.m. - 1:30 p.m., Monday - Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.



Angelica Perez
Examiner



MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER

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March 27, 2007